ABSTRACT OF THE DISCLOSURE

Centimeter thick plates or lenses made from calcium fluoride or barium fluoride with beam propagation in the direction of the <110> crystal direction or of a main axis equivalent thereto are provided as retardation elements for the deep ultraviolet. They can be installed in an unstressed fashion. In a particular embodiment a retardation plate comprises a birefringent crystal plate which has an entry face and an exit face for incident and emerging light, respectively. A form-birefringent dielectric layer structure is applied to the entry and/or exit face. It may, for example, be a periodic sequence of at least two layers with alternating refractive indices. The retardation plate is suitable for ultraviolet light, and permits a large range of angles of incidence. Retardation elements according to the invention are particularly suitable for microlithography at 157 nm.
